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SUSTAINABLE DEVELOPMENT AND INTERNATIONAL ECONOMIC COOPERATION: SCIENCE AND TECHNOLOGY FOR DEVELOPMENT

Report of the Secretary-General

I. INTRODUCTION

1. At its forty-eighth session, the General Assembly adopted resolution 48/179 of 21 December 1993 entitled "Science and technology for development" by which it endorsed the relevant resolutions and decisions adopted by the Economic and Social Council at its substantive session of 1993 on the basis of the report of the Commission on Science and Technology for Development on its first session, including the recommendation that the Council include science and technology for development as a priority subject to be considered at the coordination segment of the Council in 1994. By the same resolution, the General Assembly stressed the importance of endogenous capacity-building in science and technology in developing countries and emphasized the vital role of the United Nations in supporting developing countries' efforts in that field, including through support of cooperation among developing countries in the field of science and technology.

2. The General Assembly requested the Secretary-General to take all necessary measures to ensure the full implementation of programme 17, science and technology for development, of the medium-term plan for the period 1992-1997 and the activities planned in this area for the period 1994-1995. It also recognized the importance of cooperation among developing countries in this field and urged the relevant United Nations organizations to provide continued and enhanced support for such efforts. It also recognized the potentially important role of the United Nations Fund for Science and Technology for Development and called for generous contributions to the Fund.

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II. IMPLEMENTATION OF PROGRAMME 17, SCIENCE AND TECHNOLOGY FOR DEVELOPMENT, OF THE MEDIUM-TERM PLAN FOR THE PERIOD 1992-1997

3. The activities planned for the 1994-1995 biennium focused on endogenous capacity-building in science and technology with particular emphasis on strengthening the capacity of developing countries for autonomous and informed decision-making regarding the acquisition, development, application and diffusion of science and technology for development. The activities of the work programme covered the analysis of factors, including foreign investment, affecting the capacity of developing countries to acquire, adapt and improve imported technology; the examination of the role of various entities, private or public, in improving entrepreneurial capabilities and in developing and disseminating technology; and the analysis of legal instruments, including intellectual property legislation in technology and technological capacity-building. Attention was paid to the improvement of interlinkages between research and development and the productive sector in developing countries.

4. An important component of the work under programme 17 was the activity of the Commission on Science and Technology for Development, serviced by the secretariat of the United Nations Conference on Trade and Development (UNCTAD) which, after the 1993 reorganization of the United Nations Secretariat, absorbed most of the functions of the former United Nations Centre for Science and Technology for Development.

5. The work of the Commission on Science and Technology for Development during the inter-sessional period 1993-1995 was organized through panels/working groups, comprised of members of the Commission, which considered selective substantive themes of interest and relevance to endogenous capacity-building in developing countries. The themes included: technology for small-scale economic activities to address the basic needs of low-income populations; the gender implications of science and technology for developing countries; and the contribution of science and technology to an integrated approach to land management. The themes were selected as contributions by the Commission to major activities of the United Nations system during the biennium. The work on basic needs, gender and land management was intended, respectively, as input to the process leading to the World Summit for Social Development (Copenhagen, 1995), the Fourth World Conference on Women (Beijing, 1995) and to the deliberations of the Commission on Sustainable Development at its third session (1995) in relation to chapter 10 of Agenda 21.

6. The Panel on Technology for Small-scale Economic Activities to Address the Basic Needs of Low-income Populations discussed how a fresh approach to science and technology could ensure that the needs of low-income populations were met. The panel concluded that the fundamental objective of the mobilization of science and technology to meet basic needs should be to create conditions that increase the ability of the poor to gain access to, comprehend and use knowledge and technology creatively in order to satisfy their basic needs. It based its recommendations on six integrating themes, namely, education, health, participation, small-scale economic activity, basic infrastructure and access to information; it also formulated special recommendations for science and technology policy for basic needs (see E/CN.16/1995/2).

7. The Panel on the Gender Implications of Science and Technology for Developing Countries recognized that, though scientific and technological interventions had improved many aspects of women's lives, over the last three decades women in developing countries had also become disproportionately poor in relation to men in their own communities. In its report (E/CN.16/1995/3) the Panel noted that there was a significant gender inequality in education and career prospects for girls and women and that women were underrepresented in scientific careers and decision-making bodies in both developing and industrialized countries. The report identified areas in science and technology in which the needs and aspirations of women had been relatively neglected. The differential effect of new technologies, especially information technologies, received particular attention.

8. The third panel, the Panel on the Science and Technology Aspects of the Sectoral Issue, dealt with integrated land management. The Panel's report (E/CN.16/1995/4) emphasized the important role that modern science and technology played in integrated land management. It also underscored the fact that the various technologies which could contribute to integrated land management were not always available in the developing countries where they were most needed. The Panel identified major barriers to effective global application of integrated land management methods and formulated approaches towards that end.

9. The Commission also undertook work on the linkages between the national research and development systems and industrial sectors of developing countries and countries in transition. An ad hoc panel established to consider the issue confirmed the view that the research and development systems in those groups of countries were not up to the task of promoting industrial development. The panel identified measures necessary to strengthen linkages between national research and development systems and productive sectors (see E/CN.16/1995/8).

10. For the current biennium, consideration was also given to the effect of information technologies on the development process. It was widely believed that information technologies had a generic influence in the development of modern technologies, thereby determining the pace of social and economic progress. However, the effects that those technologies had on the development process in general, and the technological advancement of developing countries in particular, were not yet fully understood (see E/CN.16/1995/9 and Corr.1 and 2).

11. Work under programme 17 during the biennium included a number of other activities. In accordance with General Assembly resolution 44/14 B, the UNCTAD secretariat pursued work on the Advanced Technology Assessment System (ATAS) Bulletin. The tenth issue of the Bulletin, prepared in 1995, focuses on information technology.

12. Within the framework of programme 17, the UNCTAD secretariat centred its activities on the Ad Hoc Working Group on the Interrelationship between Investment and Technology Transfer and its follow-up. The Ad Hoc Working Group completed its work in March 1994. The findings and recommendations of the Group aim to foster technological capacity-building in developing countries and countries in transition to a market economy, particularly through investment (UNCTAD/DST/3). Pursuant to the recommendations of the Working Group, UNCTAD

organized in April 1995 a Workshop on Selected Cooperation Aspects for Technological Capacity-building in Developing Countries, which examined policies for strengthening the technological capabilities of the least developed countries and the role of technological partnerships among enterprises (UNCTAD/DST/6 and 7).

13. Within the provisions of the medium-term plan, the UNCTAD secretariat continued to carry out research in related areas of science and technology and which covered aspects such as: science and technology in the global environment and their implications for developing countries; new technologies and issues in technology capability-building for enterprise development; the transfer and development of environmentally sound technologies; the role of partnerships in technological capacity-building; and the implications of the new arrangements on trade-related aspects of intellectual property rights as they relate to the transfer of technology to developing countries. To enhance human resources development in science and technology in developing countries, the secretariat also contributed to technical cooperation activities.

III. COORDINATION OF WORK AND COOPERATION IN THE FIELD OF SCIENCE AND TECHNOLOGY FOR DEVELOPMENT

14. In response to General Assembly resolution 48/179, the Economic and Social Council considered the theme of science and technology for development at its coordination segment in 1994 under the agenda item "Coordination of the policies and activities of the specialized agencies and other bodies of the United Nations system". On the basis of its review of the report of the Secretary-General on the division of labour and coordination within the United Nations system in the field of science and technology (E/1994/70), it adopted agreed conclusions 1994/1 which formulated specific measures to improve coordination and programming related to science and technology, such as: greater participation of organizations and agencies in the work of the Commission on Science and Technology for Development; formulation of common approaches and identification of areas of concentration; coordination of the medium-term plans, programme budgets and budget cycles; strengthening of existing joint units and exchange of staff; designation of focal points for science and technology in the organizations and agencies; and stronger interaction between the Commission on Science and Technology for Development, the Commission on Sustainable Development, the specialized agencies and regional economic commissions and their subsidiary bodies.

15. In response to the agreed conclusions, the organizations and entities of the United Nations system that, in accordance with their mandates, deal with science and technology issues have made efforts to enhance cooperation and coordination of work to use available resources more effectively. Thus, in the inter-sessional work of the Commission on Science and Technology for Development in the period 1993-1995 and in UNCTAD's work on the implementation of programme 17 of the medium-term plan, close cooperation was established with relevant United Nations agencies, in particular through designated focal points which serve as a network of contacts to facilitate closer interaction and cooperation.

16. Inter-agency coordination in the field of science and technology for development has been a subject of discussion by two existing coordination mechanisms, namely, the Inter-Agency Committee on Sustainable Development which is concerned with, inter alia, the science and technology aspects of Agenda 21; and the Consultative Committee on Programme and Operational Questions, which deals with issues of coordination in relation to operational or field-level activities. At their recent sessions, the respective roles and division of labour between the two bodies with regard to science and technology for development were considered. The conclusion was to deal with science and technology for development not in general terms but in relation to specific issues as they arise.

17. The issue of coordination of activities in science and technology for development was on the agenda of the second session of the Commission on Science and Technology for Development in May 1995. In reviewing the science and technology-related activities reported by the agencies of the United Nations system (E/CN.16/1995/7), the Commission noted that the possibility of overlapping mandates and programmes could not be excluded, although agencies approached science and technology issues from different sectoral perspectives. The purpose of coordination should be to promote the complementarity of various activities while avoiding duplication as much as possible. The Commission adopted its own decision on working methods which calls for avoiding unnecessary duplication of work and also provides for measures aimed at increasing transparency in the Commission's future work.

18. At its substantive session of 1995, the Economic and Social Council reviewed, on the basis of the report of the Secretary-General on Coordination in science and technology for development (E/1995/62 and Corr.1), the progress made since its previous session and stressed the coordinating role of the Council in the area of science and technology. It welcomed the important contribution to the work of the Commission on Sustainable Development made by the Commission on Science and Technology for Development in the area of integrated land management, and invited the Commission on Science and Technology for Development to continue to contribute substantively and constructively to the work of the Commission on Sustainable Development on the science and technology components of Agenda 21. The Council also decided that the Commission on Science and Technology for Development, in its substantive work, should maximize coordination in undertaking its inter-sessional studies on specific issues by relating actively to competent United Nations organs and agencies, as well as multilateral organizations. The issue of coordination was included in the provisional agenda for the third session of the Commission on Science and Technology for Development, to be held in 1997.

IV. FINANCING SCIENCE AND TECHNOLOGY FOR DEVELOPMENT

A. United Nations Fund for Science and Technology for Development

19. Activities of the United Nations Fund for Science and Technology for Development (UNFSTD) in the period 1994-1995 continued to focus on endogenous capacity-building in science and technology including technology assessment,

technology innovation and entrepreneurship, quality control, and technology information and information technologies. The Endogenous Capacity-building Programme carried out in Cape Verde, Jamaica, Pakistan, Uganda and Viet Nam has come to a conclusion in 1995 with the third round of policy dialogues among stakeholders. Based on these dialogues, technology portfolios for each country are being prepared which will be funded through a coalition of domestic and international resources.

20. The Technology Incubator Programme (Chile, China, Côte d'Ivoire, India, Nigeria, the Philippines, the Republic of Korea, Poland, Thailand, Togo, Turkey and Zimbabwe) was also brought to a conclusion in 1994. A manual on technology business incubator centres has been prepared for future use based on an overall assessment of the experience gained by UNFSTD in the countries listed above.

21. Within the interregional programme on the maintenance and repair of scientific instruments, 60 nationals of Bangladesh were trained as technicians and users and have formed a national network along the lines of the regional network in southern Africa created earlier within this programme. Similar training was carried out in Cameroon through the first financial contribution from the private sector to this programme.

22. The Science and Technology Referral System for Journalists has started operations in Sri Lanka and the Philippines.

23. Core contributions to the Fund for the period 1993-1995 came exclusively from developing countries (major among them were India, Pakistan, China, Brazil and Indonesia), while project-related funding was provided by several European countries and Japan.

B. Coalition of resources for science and technology for development

24. In pursuance of Economic and Social Council resolution 1993/73 and General Assembly resolution 48/179, the Department for Policy Coordination and Sustainable Development of the Secretariat organized in December 1994 a consultative meeting on a coalition of resources for science and technology for development. The meeting was attended by representatives of United Nations organizations, a number of multilateral and national financing and development agencies and delegates from individual countries.

25. The discussions at the meeting revealed that the issue of coalition of resources was closely interrelated with the coordination issues, as better coordination of efforts permitted the use, in a more efficient manner, of the limited resources for science and technology. The meeting stressed that any coordination arrangements must be based on user/recipient needs and demands. There was general agreement that greater commonality of action among donors in terms of better focusing and concentrating of assistance would be beneficial provided such commonality of action was demand-driven, taking into account individual donor mandates. It was pointed out that it would not be useful to try to organize a single global coalition of resources for science and technology, but that there should be multiple coalitions. The meeting felt that

any type of donor coordination mechanism should be informal and cooperative in nature and be focused on specific, well-defined types of science and technology-related themes, sectors, programmes and projects, rather than on science and technology in a generic sense. The programmatic framework for a coalition of resources should be built on a clear understanding of the focus of such an undertaking.

26. The meeting noted that the existing coordination schemes for donors in science and technology were organized on an ad hoc basis. The funding of science and technology-related activities had been largely left to spontaneous actions by donors. While such informal networks of donors should be encouraged, there would be value in having a periodic exchange of experiences among partners of different networks through a political forum such as the Commission on Science and Technology for Development. It recommended that the Commission provide a forum for exchange of views and interaction among partners of different networks and coordination schemes in the area of science and technology for development. It was also recognized that the private sector had a potentially important and significant role to play in the development and encouragement of science and technology capacity.

27. In considering that issue, the Commission on Science and Technology for Development at its second session recognized the generally diminishing level of the donor resources that were available for development cooperation in general and science and technology in particular. In that regard, the Commission welcomed the outcome of the Consultative Meeting on a Coalition of Resources for Science and Technology for Development, which had included a call for multiple coalitions of resources. The Commission recognized that, given the shortage of funds available for science and technology for development, support for good projects identified might be requested from the regional and interregional programme funds that were provided by various international funding sources, particularly the United Nations Development Programme. A useful idea that could be proposed for funding might be to follow up on the Endogenous Capacity-building Programme undertaken by the United Nations Fund for Science and Technology for Development aimed at improving national science and technology policies, in which the involvement of funding agencies and the regional economic commissions would be essential.

28. A coordinating role for the Commission could be to stimulate global thinking and system-building on chosen topics, such as information technology, in order to devise programmes of a multilateral nature that would be instrumental in mobilizing resources from all available sources.

29. The Economic and Social Council, at its substantive session of 1995, noted the recommendations adopted at the Consultative Meeting on a Coalition of Resources for Science and Technology for Development and recommended that, at the international level, a coalition of resources should focus on specific themes and common goals among recipients, donors and international financing institutions, including the World Bank and the regional development banks. Such themes and common goals should be based on voluntary and informal mechanisms that promote the full interaction of both donors and recipients. The Council also recommended that the Commission on Science and Technology for Development should provide a forum for exchanging views and interaction among partners of

different networks and coordination schemes. Such a forum could be held either as a segment of its biennial sessions or as an inter-sessional activity, as required and defined by the Commission on Science and Technology for Development in consultation with relevant United Nations entities and international organizations.

V. FUTURE WORK IN THE AREA OF SCIENCE AND TECHNOLOGY FOR DEVELOPMENT

30. The Commission on Science and Technology for Development, at its second session (May 1995) and in considering the findings and experiences of its first inter-sessional period (1993-1995), decided on its future activities and adopted a new programme of work for the inter-sessional period 1995-1997.

31. Recognizing the importance of information technologies as important requisites for planning, development and decision-making in science and technology, the Commission agreed to focus its work during the second inter-sessional period on information technologies and their implications for growth and development. The consideration of that broad subject area would include analysis of various aspects of the issues related to information technologies including the policy, institutional, legal and infrastructural requirements for the development, transfer and use of such technologies. Other aspects to be addressed in that context include the effects of information technologies on employment, economic growth and human resource development, the implications of revolutionary improvements in the cost-effectiveness of information technologies for the development of a global information structure, and specific applications in areas such as small-scale economic activities, the sustainable use of national resources, and improved governance.

32. The inter-sessional work will be carried out through panels and working groups in accordance with the "new working style" adopted by the Commission at its first session. The new working style is characterized by the active involvement of the members of the Commission in the implementation of the work programme in cooperation with the UNCTAD secretariat.

33. The Commission on Science and Technology for Development and UNCTAD were requested by the Economic and Social Council to liaise in establishing a programme of country reviews on science, technology and innovation policy for interested countries. The main objective of the reviews would be to identify the generation, diffusion and use of technology and technical knowledge in a particular country and to trigger the process of building national systems of innovation, that is, the national institutions, policies and incentive structures that support the process of technological development and innovation. The reviews would assess the role of various actors in the economy including government, the business sector and non-governmental institutions in strengthening national systems of innovation and promoting a greater degree of technological change and innovation at the enterprise level.

34. The Economic and Social Council, at its substantive session of 1995, having recognized the unique role of the Commission on Science and Technology for Development as a global forum for the examination of science and technology

questions, endorsed the above work programme. The work programme also includes follow-up to the work on gender and activities in the area of coalition of resources. The Council also invited the Commission to give consideration to ways and means of taking advantage of the twentieth anniversary of the United Nations Conference on Science and Technology for Development (Vienna, 20-31 August 1979) for the formulation of a common vision for the future contribution of science and technology to development.

35. The Commission on Science and Technology for Development will continue contributing to the work of the Commission on Sustainable Development on the science and technology components of Agenda 21.

36. The activities under programme 17 of the medium-term plan in the area of science and technology planned for the period 1996-1997, taking into account the work programme of the Commission on Science and Technology for Development and the conclusions and recommendations of the UNCTAD Ad Hoc Working Group on the Interrelationship between Investment and Technology Transfer will focus on issues and areas that may help to provide fresh insights into the consideration of science, technology and innovation policies. It will also include work on monitoring developments in science and technology, particularly those with implications for society at large, on production, employment and competitiveness, including assessment and diffusion of scientific and technological knowledge.